

HAHN AND ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS

May 16, 2016

Mr. Dana Bayuk
Oregon Department of Environmental Quality
Northwest Region, Portland Office
Portland Harbor Section
700 NE Multnomah Street, #600
Portland, Oregon 97232

HAI Project No. 2708
DEQ ECSI File No. 84

**SUBJECT: Progress Report, NW Natural Site, 7900 NW St. Helens Avenue and
7200 NW Front Avenue, Portland, Oregon**

Mr. Bayuk:

Hahn and Associates, Inc. (HAI) has prepared this monthly Progress Report to summarize Remedial Investigation/Feasibility Study (RI/FS) and source control-related work activities conducted by NW Natural relating to historic manufactured gas plant (MGP) activities at the NW Natural Site during the month of April 2016. NW Natural is completing upland investigation and cleanup activities at the NW Natural Site under the Voluntary Agreement No. ECVC-WMCVC-NWR-94-13 (Voluntary Agreement) between NW Natural and the Oregon Department of Environmental Quality (DEQ).

1.0 Communications and Document Submittals

In correspondence dated April 4, 2016 (Jen Mott to Dana Bayuk), Anchor QEA, on behalf of NW Natural, transmitted the *NW Natural Groundwater Treatment System Operations and Maintenance Manual*, prepared by Severson Environmental Services, Inc.

In correspondence dated April 5, 2016 (Dana Bayuk to Halah Voges), DEQ provided written feedback on NW Natural's proposed hot spots matrix, which was provided with the meeting materials for the March 29, 2016 FS check-in meeting.

In correspondence dated April 11, 2016 (Dana Bayuk to Halah Voges), DEQ transmitted the agency's determination regarding chemical class (e.g., TPH, total PAH) designations and use of these designations for determining risk and potential hot spot presence.

A project manager call was conducted with DEQ on April 13 and April 26, 2016 and a program manager call was conducted with DEQ on April 14, 2016 to discuss project status and schedules for work at the Gasco Site.

In correspondence dated April 15, 2016 (Madi Novak to Dana Bayuk and Ben Hung), Maul, Foster, and Alongi, Inc. (MFA), on behalf of Siltronic, transmitted the Comprehensive Groundwater Monitoring Program and Schedule, with Siltronic information incorporated, to both DEQ and NW Natural.

In correspondence dated April 15, 2016 (Jen Mott to Dana Bayuk), Anchor QEA, on behalf of NW Natural, provided monthly HC&C system figure sets as part of the routine HC&C system reporting.

In correspondence dated April 20, 2016 (Jen Mott to Dana Bayuk), Anchor QEA, on behalf of NW Natural, transmitted NW Natural and Siltronic data summary tables for RI data on the Siltronic property. These tables were transmitted for DEQ review and

concurrence that they identify the datasets DEQ expects NW Natural to use to complete the Gasco Site RI/RA Addendum Report for the northern portion of the Siltronic property.

In correspondence dated April 22, 2016 (Jen Mott to Dana Bayuk) Anchor QEA, on behalf of NW Natural, transmitted the groundwater chemistry database, updated with results from the December 2015 integrated groundwater monitoring event.

A Gasco Uplands FS check-in meeting with representatives of NW Natural and DEQ was conducted on April 25, 2016 to discuss technology screening. Materials related to the FS check-in meeting were transmitted to DEQ in correspondence dated April 18, 2016 (Halal Voges to Dana Bayuk).

In correspondence dated April 25, 2016 (Dana Bayuk to Ben Hung), DEQ provided comments on the third and fourth quarter 2015 groundwater treatment residuals packages.

A teleconference was conducted on April 27, 2016 with representatives of DEQ and NW Natural to discuss risk-related topics related to preparation of the RI/RA Addendum for OU1 of the Gasco Site.

A teleconference was conducted on April 28, 2016 with representatives of DEQ and NW Natural to discuss topics related to HC&C source control test data and the schedule for finalization of the groundwater model for the Site.

2.0 Field Work

The final samples as per the supplemental Doane Creek investigation activities were collected on April 1, 2016.

Single-well aquifer pump test activities were completed at 12 monitoring wells screened in the Fill water bearing zone between March 28, 2016 and April 11, 2016.

HAI field activities related to monitoring and maintenance of the dense non-aqueous phase liquid (DNAPL) extraction system at surficial fill well locations MW-6-32 and MW-13-30 occurred during April 2016. The system recovered approximately 29 gallons of fluids in April, primarily DNAPL.

Tasks related to maintenance of the HC&C system and the groundwater treatment system were conducted in April 2016, with the system operating under Phase 2 testing parameters since July 21, 2015. New extraction well PW-1Ub was brought online during April 2016.

Baseline DNAPL removal as needed to maintain at levels below the top of the well sumps was conducted by Anchor QEA during April 2016 in the following wells near the river shoreline.

- MW-16-45
- MW-18-30
- MW-26U
- MW-38U
- MW-PW2L
- PW-2L

On March 31, 2014 NW Natural discontinued routine discharges of treated groundwater to the sanitary sewer (Industrial Wastewater Discharge Permit 500.022). During April 2016 all water was directed to NW Natural's on-site wastewater treatment plant and discharged to the Willamette River consistent with National Pollutant Discharge Elimination System (NPDES) Permit No. 103061 (expires August 31, 2018). Results from NW Natural's NPDES effluent sampling are provided to DEQ in Discharge Monitoring Reports that are submitted on a monthly basis in accordance with the permit. A total of 11,228,618 gallons of treated water were discharged under the NPDES permit during April.

3.0 Anticipated Activities and May and June 2016

NW Natural and DEQ technical working group communications and meetings are anticipated to occur as needed during May and June 2016 to discuss ongoing project tasks.

The draft Feasibility Study Work Plan for the Gasco Uplands will be under development during the indicated timeframe.

Surveying of the Northwest Drainage Pond portion of Doane Creek (features and sample locations) will be conducted in May (completed May 3, 2016). Laboratory data packages related to the Doane Creek supplemental investigation activities are expected to be received in May, with validation occurring in May and June 2016.

Planning and preparations for completion of the RI/RA Addendum for the northern portion of the Siltronic property will be underway during the indicated timeframe. NW Natural hopes to work with the Oregon Department of Justice to complete related revisions to the Voluntary Agreement.

A schedule describing the process steps and estimated timeline for completing the groundwater model will be provided to DEQ in May (provided May 1, 2016). A proposal for recharge will be provided to DEQ in May (provided May 10, 2016), with model calibration to occur during May and June 2016 after receiving DEQ approval for completing the calibration.

Advancement of TarGOST borings is scheduled for the week of June 20, 2016. This event represents 1 year after startup of full-time, full-scale operation of the HC&C System and will be at the same locations as the November 2015 (6 month) event. This event was previously scheduled for May 2016, but was rescheduled due to mechanical failure of the CPT drill rig.

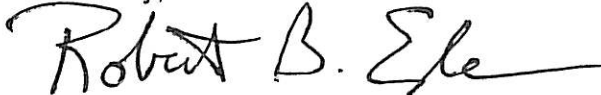
The following reports and work plans for the Site have been submitted to DEQ through the date of this progress report. Unless otherwise noted, NW Natural has not received DEQ comments on these documents.

- *Fill WBZ Trench Design Evaluation Report, Gasco/Siltronic*, prepared by Anchor QEA, dated April 8, 2015.
- *Hydraulic Control and Containment (HC&C) System Operation and Maintenance (O&M) Manual*, prepared by Anchor QEA, dated May 1, 2015.
- *HC&C Capture Performance and Monitoring Plan (PMP)*, prepared by Anchor QEA, dated May 1, 2015.

- *Evaluation of Location of Former Industrial Use Water Supply Well Mult 802, NW Natural Gasco Property, Portland, Oregon*, prepared by Hahn and Associates, Inc., dated November 11, 2015.
- *Tabulation of the Current Groundwater Monitoring Program* as approved for NW Natural implementation at the Gasco and Siltronic properties, transmitted January 15, 2016 and revised March 18, 2016. This document needs DEQ feedback to confirm it achieves DEQ's objective of a holistic / comprehensive document.
- *Contaminated Materials Management Plan for the NW Natural Gasco Site*, prepared by Anchor QEA, dated February 23, 2016.
- *NW Natural Groundwater Treatment System Operations and Maintenance Manual*, prepared by Severson Environmental Services, Inc., dated March 2016
- *NW Natural and Siltronic Data Summary Tables – RI Data on the Siltronic property*, transmitted to DEQ on April 20, 2016. These tables need DEQ feedback to confirm that the datasets summarized in the tables are inclusive of datasets DEQ expects to be used for the Gasco Site RI/RA Addendum for the northern portion of the Siltronic property (DEQ feedback provided May 13, 2016).

Should you have any questions, please contact the undersigned.

Sincerely,



Rob Ede, R.G.
Principal

robe@hahnenv.com

Cc: Mr. Bob Wyatt, NW Natural (electronic only)
Ms. Patty Dost, Pearl Legal Group PC (electronic only)
Ms. Rachel Melissa, Pearl Legal Group PC (electronic only)
Ms. Sarah Riddle, Pearl Legal Group PC (electronic only)
Mr. Carl Stivers, Anchor QEA, L.L.C. (electronic only)
Mr. John Edwards, Anchor QEA, L.L.C. (electronic only)
Mr. Ben Hung, Anchor QEA, L.L.C. (electronic only)
Mr. Ryan Barth, Anchor QEA, L.L.C. (electronic only)
Ms. Halah Voges, Anchor QEA, L.L.C. (electronic only)
Ms. Jen Mott, Anchor QEA, L.L.C. (electronic only)
Mr. John Renda, Anchor QEA, L.L.C. (electronic only)
Mr. Henning Larsen, DEQ NW Region (electronic only)
Mr. Keith Johnson, DEQ NW Region (electronic only)
Mr. Dan Hafley, DEQ NW Region (electronic only)
Ms. Jennifer Peterson, DEQ NW Region (electronic only)
Mr. Mike Poulsen, DEQ NW Region (electronic only)
Ms. Cindy Bartlett, Geosyntec Consultants, Inc. (electronic only)
Mr. Bruce Marvin, Geosyntec Consultants, Inc. (electronic only)
Ms. Karen Kosiarek, Geosyntec Consultants, Inc. (electronic only)

Mr. Myron Burr, Siltronic Corporation (electronic only)
Mr. James Peale, Maul Foster & Alongi, Inc. (electronic only)
Ms. Madi Novak, Maul Foster & Alongi, Inc. (electronic only)
Ms. Kerry Gallagher, Maul Foster & Alongi, Inc. (electronic only)
Ms. Kristine Koch, Region 10 EPA (electronic only)
Mr. Sean Sheldrake, Region 10 EPA (electronic only)
Mr. Rene Fuentes, Region 10 EPA (electronic only)
Ms. Eva DeMaria, Region 10 EPA (electronic only)
Mr. Lance Peterson, CDM, Inc. (electronic only)